

## Biographical Sketch

A. Anil Kumar

<http://www.pvamu.edu/pages/2816.asp>

Project XLR8: <http://www.pvamu.edu/pages/2794.asp>

Partnership for Innovation in Education (PIE) <http://www.pvamu.edu/pages/2806.asp>

### (a) Professional Preparation

Osmania University, Hyderabad, B.Sc. (Physics), 1971  
Indian Institute of Technology, New Delhi, M.Sc. (Physics), 1973  
Indian Institute of Science, Bangalore, Ph.D. (Physics), 1978  
Research Fellow, University of Warwick, England, Physics, 2/78-5/79  
Visiting Research Fellow, ESIS Program, University de Liege, Belgium, 5/79-10/79  
Research Associate, Simon Fraser University, Canada, 10/79-8/81  
Professional Associate, University of Manitoba, Canada, 9/81-8/83

### (b) Appointments

Professor, Electrical & Computer Engineering, 1996-present  
Department Head, Physics, 2001-present  
Associate Dean, College of Arts & Sciences, 2001-2003  
Director of Research & Special Assistant to the President for Science & Technology, 1998-2001  
Associate Dean, College of Engineering, 1997-1998  
Associate Professor, Electrical Engineering, 1989-1996  
Assistant Professor, Electrical Engineering, 1986-1989  
Visiting Lecturer, Electrical Engineering, 1985-1986  
Visiting Assistant Professor - Texas A&M University, 9/83-8/85

### (c) Publications

#### Related to this Proposal:

1. A.A. Kumar, Preparing Students to Onboard Into STEM Careers, TMCf Member Universities Professional Institute & Exhibition, *New Orleans, March 15-18, 2009*  
<http://www.pvamu.edu/Include/Physics/MUPIE%202009/MUPIE-2009-KUMAR-PREPARING-STEM-MAJORS.pdf>
2. A.A. Kumar, STEM Support to Improve Math and Science Instruction, TMCf Member Universities Professional Institute & Exhibition, *New Orleans, March 15-18, 2009*  
<http://www.pvamu.edu/Include/Physics/MUPIE%202009/MUPIE-2009-MATH-SCI-KUMAR.pdf>
3. A.A. Kumar and F.-C. Wang, Assessing Student Learning at the Course Level in Science Courses – Can We Reconcile Large Classes, Multiple Choice Tests and True Learning?, Presentation at the 9th Annual TAMU Assessment Conference, February 2009 <http://www.pvamu.edu/pages/5474.asp>
4. Nicole Poenitzsch, Traci Toler, Allan Kaster, Edward Mason, A. Anil Kumar, Critical Issues in School Redesign – Project XLR8: An Innovative School-University Partnership, Presentation at the Annual SACS (Southern Association of Colleges and Schools) Conference, San Antonio, December 2008 <http://www.pvamu.edu/pages/5474.asp>
5. School Reform and Redesign – What They Are and What They Aren't, TMCf Member Universities Professional Institute & Exhibition, *Charlotte, March 2-4, 2008*  
[http://www.pvamu.edu/Include/Physics/Marshall\\_gates/MUPIE%202008/KUMAR-CHARLOTTE-PRSN-WEB.pdf](http://www.pvamu.edu/Include/Physics/Marshall_gates/MUPIE%202008/KUMAR-CHARLOTTE-PRSN-WEB.pdf)

**Other Publications:****Software/Hardware Systems Under Development (Under Consideration for Technology Transfer):**

1. CSPIFF - Circuit Simulation Program In the Presence of Fatal Faults for reliability and fault-tolerance of large scale electronic systems
2. CSIM - Communication Systems Simulator for simulation of arbitrary communication systems
3. BCHS – Bone Conduction Headset – a novel communication system designed for NASA-JSC and demonstrated at NASA JSC Inspection Days '99.

**(d) Synergistic Activities**

1. Project XLR8: A high school redesign program funded by the Thurgood Marshall College Fund and the Bill and Melinda Gates Foundation (Recipient of the Outstanding Achievement Award for School Reform, 2009)
2. Mentor-Protégé Program and Small Business Mentoring Activities, funded by SBA, EPA and DARPA through the Science & Engineering Alliance (1999-2006)
3. Enhancement of the Learning and Experiential Environment of Physics Majors and Minors, Title III funding (2002-2007)
4. Lead Science Cohort, Texas A&M University System's Regents Initiative for Excellence in Education (one of five faculty recipients in the nine university system of the Outstanding Achievement Award, 2004)
5. Previous efforts include: Received and managed, as a single principal investigator, \$1M worth of research during '93-'99 from agencies including: the Army, NASA, DOE, Motorola and Texas. Most recent technical work has been in the area of signal and image processing, and scientific database development for potential applications in digitized battlefield scenarios and communication network security. Also contributed extensively to College level and University level research by authoring proposals in a variety of disciplines including: education, manufacturing, radiation, and community economic development.

**(e) Collaborators & Other Affiliations**

1. Richard Alo, Professor of Computer and Mathematical Sciences at and Executive Director for Center for Computational Science and Advanced Distributed Simulation, University of Houston-Downtown
2. Edward L. Mason, Department Head, Curriculum and Instruction, Prairie View A&M University
3. Several high school teachers

**(ii) Other Personnel**

Several undergraduate and graduate students mainly from Electrical and Computer Engineering, and one student from Psychology